campaign to enable us to complete the renovations to our main research building. This renovation is underway, but is only partially funded by a major NSF Academic Research Infrastructure award and university match, and is necessary for our continued success and productivity.

With its specialized niche as an estuarine educational and research center, RTC is growing into a dynamic community of scientists with a mission and momentum. Recent activities have collectively brought a new enthusiasm to the RTC community, resulting in expanding course offerings, increasing use of the newly refitted R/V Questuary, and an upsurge in collaborative science. For more information please check out the RTC web site at ttp://thecity.sfsu.edu/~rtces.

Suisun Ecological Workgroup Update

Eliza Sater, DWR

In the 1995 Bay/Delta Plan, SWRCB directed DWR to convene an interagency workgroup to evaluate the technical basis of the Suisun Marsh water quality objectives and their effects on beneficial uses. Consequently, the Suisun Ecological Workgroup (SEW) was formed in May 1995, to recommend salinity objectives to protect the beneficial uses of the Suisun Marsh. SEW envisioned this evaluation as a two-step process. The first step involved evaluating the impact of various salinity regimes on ecosystem components, such as brackish marsh vegetation, wildlife, waterfowl, and fish. This process, though continuing, was largely completed in March 1998. Findings from these evaluations, which included identification of significant data gaps, recommendations for long-term monitoring programs, special studies, water quality objectives and protective measures for special status species, were presented at an all-day workshop in March.

SEW is now embarking on the second step of the evaluation process. The workgroup is now examining the effect of various salinity regimes on the Marsh ecosystem. SEW approached this task by crafting conceptual models of each ecosystem component and attempting to link them with an ecosystem-based conceptual model. In this way, SEW is attempting to tease apart the effects of salinity, hydrology, wetland management actions and availability of habitat on ecosystem health.

Evaluating the impact of increasing the variability of the salinity regime in the Suisun Marsh is of primary interest to SEW. Proponents suggest that a variable salinity regime may match historic conditions more closely, thus supporting native species and possibly promoting species diversity by decreasing the abundance of nonnative species that can establish competitive dominance. Concern exists, however, that the Marsh has been altered to such an extent that an increase in variability of the salinity regime may not have this beneficial effect and may negatively impact the managed wetlands in the Marsh.

To evaluate these issues, SEW has been comparing the effect of various combinations of salinity regime components. The main components being evaluated are: (1) current Suisun Marsh conditions (X2 standard, Suisun Marsh Salinity Control Gate operation, interior numeric standards for the Marsh); (2) current Suisun Marsh conditions, with actions in the proposed Suisun Marsh Preservation Agreement (SMPA) Amendment Three; (3) X2, SMPA Amendment Three limited to management actions, and limited SMSCG operations; and (4) X2, with limited SMSCG operations and no interior Marsh numeric salinity standards. The group is evaluating model data, simulating flow and salinity in the Suisun Marsh with and without gate operations, as part of this process.

Lack of available data and the confounding question of how to balance competing resource needs continue to complicate SEW's evaluation. Consequently, the workgroup is reconsidering the October 1998 deadline for completion of its final report. SEW may hold a public workshop during the late summer or early fall 1998 to present findings and draft recommendations. For more information on this workshop or the workgroup in general, please contact Eliza Sater at (916) 227-0179 or check out SEW's website at http://iep.water.ca.gov/sew/.

Chinook Salmon Passage at the Suisun Marsh Salinity Control Gates Assessed

Heidi Rooks, DWR

Resource agencies have been concerned that operating the Suisun Marsh Salinity Control Gates (SMSCG) causes a delay or may block adult chinook salmon migrating upstream through Montezuma Slough (Figure 1). A multi-agency SMSCG Steering Group was formed to address this concern, assess the information available, and propose a solution, if needed. The group completed its assessment and proposed a solution which, if all goes well, should be in place with evaluations beginning by September 1998.

The SMSCG Steering Group was formed because two items—the US Army Corps of Engineers permit for the SMSCG and the National Marine Fisheries Service Biological Opinion for winter-run chinook salmon—specify that investigations must be designed to address passage of upstream migrating adults at the SMSCG. According to the Corps permit, mitigation is to be accomplished by modifying the operation or design of the SMSCG (Figure 2).

DWR and DFG, in conjunction with the Steering Group, conducted tagging studies in 1993 and 1994 to determine the success and duration of adult fall-run chinook salmon passing through the SMSCG. These experiments were conducted to determine which feature or operational configuration was responsible for delaying passage (Tillman et al. 1996; Edwards and Urquhart 1996). After considering potential population-level impacts (DWR 1997a), the Steering Group concluded from the studies that operation of the SMSCG delays and blocks the upstream migration of all runs of chinook salmon along this migratory route, at a minimum, for 12 hours each tidal cycle (6 hours two times a day), and delays passage even when just the flashboards are installed and the three radial gates are held open.

The Steering Group agreed that there are two objectives for a solution to the blockage: (1) to provide an opportunity for all races of chinook salmon and steelhead to pass unimpeded (when the flashboards are installed and the gates are operating); and (2) to not compromise the ability of DWR and USBR to meet SWRCB channel water salinity standards.

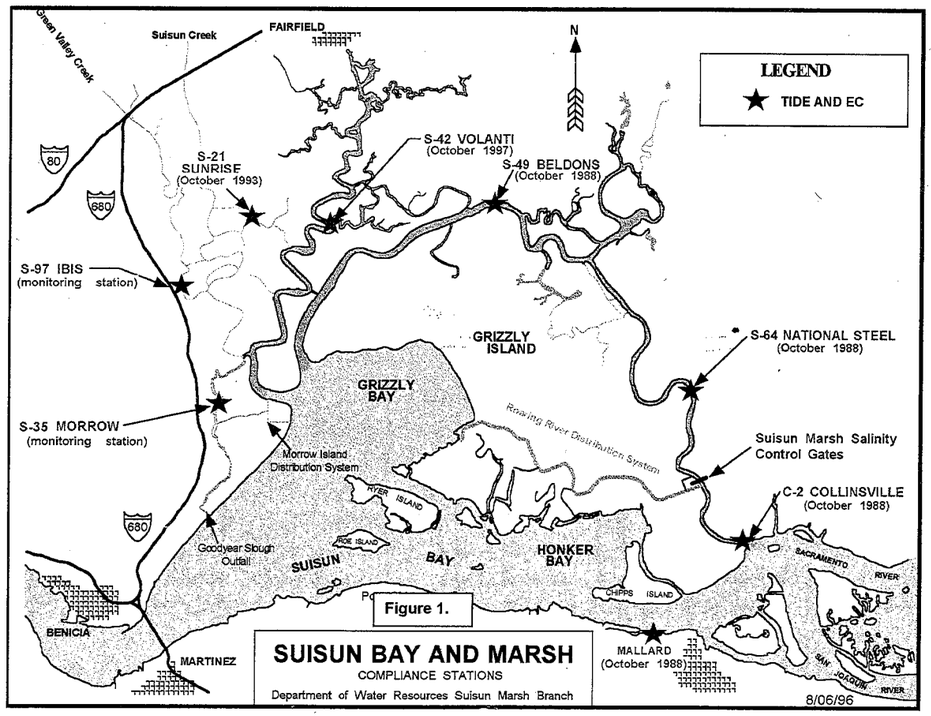

Figure 1.